

SEMICONDUCTOR PACKAGE AND METHOD OF MAKING USING
LEADFRAME HAVING LEAD LOCKS TO SECURE LEADS TO
ENCAPSULANT

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ABSTRACT

[0086] A lead frame for making a semiconductor package is disclosed. The leadframe's leads include a lead lock provided at a free end of each inner lead that is adapted to increase a bonding force of the inner lead to a resin encapsulate, thereby effectively preventing a separation of the inner lead from occurring in a singulation process involved in the fabrication of the semiconductor package. A semiconductor package fabricated using the lead frame and a fabrication method for the semiconductor package are also disclosed. The lead frame includes a paddle, a plurality of tie bars for supporting the corners of the paddle, a plurality of leads arranged at each of four sides or two facing sides of the paddle in such a fashion that they are spaced apart from an adjacent side of the paddle while extending perpendicularly to the associated side of the paddle, each of the leads having lead separation preventing means adapted to increase a bonding force of the lead to a resin encapsulate subsequently molded to encapsulate the lead frame for fabrication of the semiconductor package, and dam bars for supporting the leads and the tie bars. Additional package embodiments include exposed protrusions extending downward from the leads. The exposed protrusions are irradiated with a laser to remove set resin prior to a solder ball attachment step.